## Overview

SITRANS FX vortex flowmeter are designed for use in industrial applications and optimally suited to the demands in auxiliary supply systems.

The proven principle of vortex flowmeters is suitable for measurement of liquids, gases and vapors unaffected by conductivity, viscosity, temperature and pressure.

## Benefits

- Integrated pressure and temperature compensation
- Temperature compensation for saturated steam included as standard
- High measuring accuracy
- Maintenance-free sensor
- Non-wearing, fully welded stainless steel construction with high resistance to corrosion, pressure and temperature
- SIL2 certified according to IEC 61508 Edition 2
- Use in hazardous areas
- Integrated reduction of nominal diameter for space-saving and economic installation and large measuring ranges
- Redundant data management: Easy exchange of electronics without loss of calibration and configuration data
- FAD (Free Air Delivery) functionality
- Gross and net heat calculation to support advanced energy management
- Remote version with cable length up to 50 m (164 ft) (in preparation)

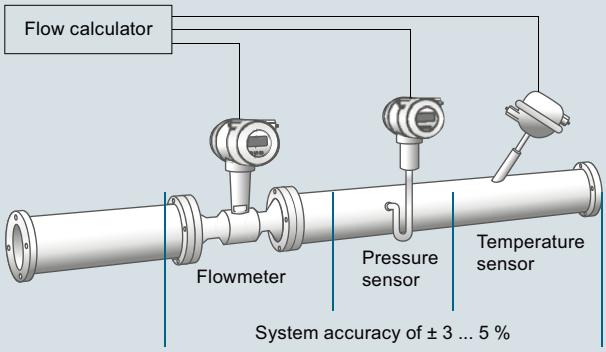
Even the basic version of the vortex flowmeter SITRANS FX330 is equipped with temperature compensation for saturated steam applications. With the optional pressure sensor the SITRANS FX330 has integrated density compensation for calculation of corrected volume and mass (online density compensation). The density compensation for calculation of corrected volume and mass is based on the standards of NIST for gases and IAPWS for steam.

### *Higher measuring accuracy with the use of compact measuring systems*

With the classic installation of a vortex flowmeter and separate pressure and temperature sensor as well as flow calculator, all errors occurring in the measuring chain must be taken into account when determining system accuracy. This can result in a measuring error between ± 3 to 5 %.

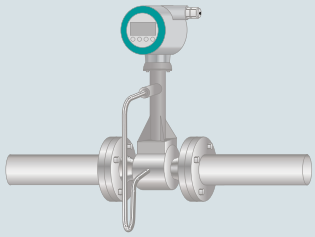
Using a vortex flowmeter with integrated pressure and temperature compensation such as the SITRANS FX330 allows you not only to lower installation costs but also increase the measuring accuracy of the measuring point. In this case the accuracy is ± 1.5 % of the measured value.

*classic*




*integrated*

Flowmeter with integrated pressure and temperature compensation



System accuracy of ±1.5 %

The SITRANS FX330 in flange design is available with integrated reduction of nominal diameter for space-saving installations and large measuring spans. About 90% of all vortex flowmeters are ordered one size smaller than the line diameter in order to increase the flow speed and to get a wider measuring range. Here, the line has to be reduced before and widened after the sensor, typically including 20x DN inlet and 5x DN outlet run. With the reduction and widening of nominal diameter included in the sensor, it is no longer necessary. To compensate the non-existent straight inlet run between reduction and the vortex bluff body, these devices are specially calibrated and linearized.

A new feature of the SITRANS FX330 is the advanced signal processing and filtering called AVFD (Advanced Vortex Frequency Detection): Interferences and disturbances in the measuring signal are suppressed, signals outside from the relevant frequency band are filtered out.

Redundant data management prevents loss of calibration and configuration data when changing electronics or display.

By default, all SITRANS FX330 meters are factory-calibrated (traceable to international standards) and pre-set according to customer specifications. The SITRANS FX330 also comes with an installation wizard to ease installation; e.g. in a steam application it will only show related settings.

Developed according to the standard IEC 61508 edition 2, the SITRANS FX330 can be used in safety-related application with classification SIL2 for continuous volume flow measurement.

## SITRANS FX330



### Application

- Measurement of saturated steam and superheated steam
- Steam boiler monitoring
- Heat metering of steam and hot water
- Measurement of consumption of industrial gases
- Measurement of consumption in compressed air systems
- Monitoring of compressor output
- Evaluation of Free Air Delivery (FAD)
- SIP and CIP processes in the food, beverage and pharmaceutical industries
- Measuring of conductive and non-conductive liquids
- Safety-related measurement in SIL applications (SIL2)

***Gross and net heat quantity calculation***

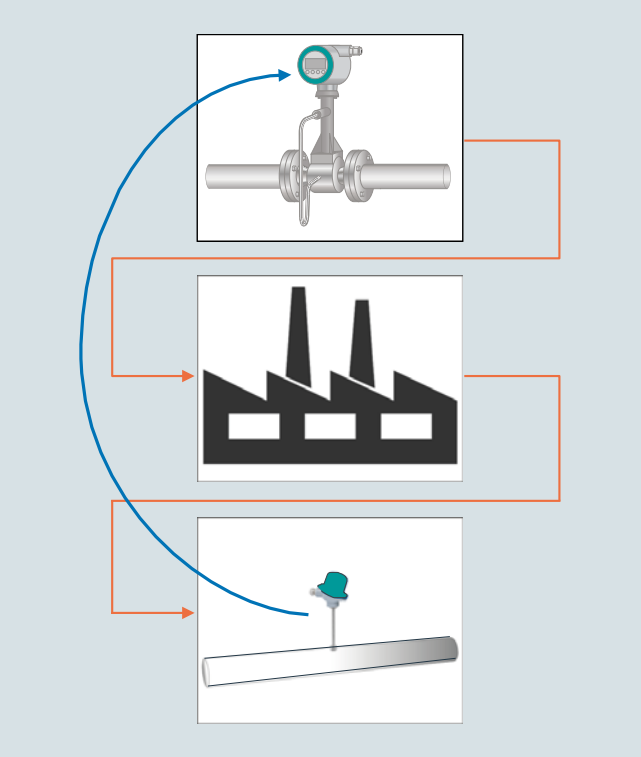
The SITRANS FX330 was designed for applications in auxiliary and supply service lines, such as internal monitoring of energy flows for saturated and superheated steam or hot water. Equipped with temperature sensor as standard, the device can be installed as heat meter in the feed line directly connected with an external temperature sensor in the return line. The gross and net heat calculation can be fed into a DCS to support advanced energy management.

When it comes to energy, the most accurate measurement of consumption is essential. By combining flow, temperature and pressure measurements in one device, SITRANS FX330 provides the basis for a precise mass flow calculation.

In steam applications, the software even determines the enthalpy - the heat content - of the steam. Therefore, SITRANS FX330 is able to calculate the gross heat quantity.

In case net heat quantity consumption of process is asked for, a single temperature sensor can be added to the return line. SITRANS FX330 uses the readings to calculate the amount of heat consumed.

The SITRANS FX330 thereby proves itself to be a reliable partner.



### Design

| **SITRANS FX330**<br>**Flange** | **SITRANS FX330**<br>**Sandwich** |
|---|---|
|  |  |
| Flange version with integrated temperature compensation as standard for saturated steam and optional pressure compensation for superheated steam, gases and wet gases. | All advantages of the flange version in a space-saving sandwich design; centering rings guarantee an easy installation without any offset. |
| Integrated reduction of nominal diameter for space-saving and economic installations plus large measuring ranges. | Integrated reduction of nominal diameter not available |
| Also in remote design with field housing and connection cable up to 50 m (164 ft) (in preparation) | |
| With shut off valve allowing<br>• exchange and calibration of pressure sensor<br>• pressure and leak testing of pipeline without interrupting the process | |

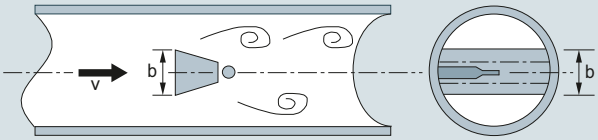
### Function

Vortex flowmeters are used to measure the flow of gases, vapors and liquids in completely filled pipes. The measuring principle is based on the principle of the Karman vortex street. Inside the measuring sensor vortices are shed from a bluff body and are detected by a sensor located behind. The frequency **f** of the vortex shedding is proportional to the flow velocity **v**.

The nondimensional Strouhal number **S** describes the relationshipbetween vortex frequency **f,** width **b** of the bluff body and the mean flow velocity **v**:

**f = (S . v) / b**

The vortex frequency is recorded at the sensor and evaluated at the converter.




Functional principle

## Configuration

***Available combinations of sensors and connection size for SITRANS FX330 in flanged design are shown in the table below.***

| SITRANS FX330 Flanged (7ME2610-...) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Sensor size** | **Connection size** | **EN 1092-1, Form B1/B2, PN 10** | **EN 1092-1, Form B1/B2, PN 16** | **EN 1092-1, Form B1/B2, PN 25** | **EN 1092-1, Form B1/B2, PN 40** | **EN 1092-1, Form B1/B2, PN 63** | **EN 1092-1, Form B1/B2, PN 100** | **ANSI B16.5, class 150** | **ANSI B16.5, class 300** | **ANSI B16.5, class 600** |
| DN15 | DN 15 | - | - | - | • | - | • | • | • | • |
| | DN 25 | - | - | - | • | - | • | • | • | • |
| | DN 40 | - | - | - | • | - | • | • | • | • |
| DN 25 | DN 25 | - | - | - | • | - | • | • | • | • |
| | DN 40 | - | - | - | • | - | • | • | • | • |
| | DN 50 | - | • | - | • | • | • | • | • | • |
| DN 40 | DN 40 | - | - | - | • | - | • | • | • | • |
| | DN 50 | - | • | - | • | • | • | • | • | • |
| | DN 80 | - | • | - | • | • | • | • | • | • |
| DN 50 | DN 50 | - | • | - | • | • | • | • | • | • |
| | DN 80 | - | • | - | • | • | • | • | • | • |
| | DN 100 | - | • | - | • | • | • | • | • | • |
| DN 80 | DN 80 | - | • | - | • | • | • | • | • | • |
| | DN 100 | - | • | - | • | • | • | • | • | • |
| | DN 150 | - | • | - | • | • | • | • | • | • |
| DN 100 | DN 100 | - | • | - | • | • | • | • | • | • |
| | DN 150 | - | • | - | • | • | • | • | • | • |
| | DN 200 | • | • | • | • | - | - | • | • | - |
| DN 150 | DN 150 | - | • | - | • | • | • | • | • | • |
| | DN 200 | • | • | • | • | - | - | • | • | - |
| | DN 250 | • | • | • | • | - | - | • | • | - |
| DN 200 | DN 200 | • | • | • | • | - | - | • | • | - |
| | DN 250 | • | • | • | • | - | - | • | • | - |
| | DN 300 | • | • | • | • | - | - | • | • | - |
| DN 250 | DN 250 | • | • | • | • | - | - | • | • | - |
| | DN 300 | • | • | • | • | - | - | • | • | - |
| DN 300 | DN 300 | • | • | • | • | - | - | • | • | - |

• available
- not available

## Technical specifications

| | | |
|---|---|---|
| **Range of application** | Flow measurement of liquids, gases and vapors | |
| **Mode of operation** | | |
| Measuring principle | Karman vortex street | |
| Primary measured value | • Volume flow<br>• Mass flow<br>• Corrected volume flow<br>• Density<br>• Temperature<br>• Pressure<br>• Heat energy | |
| Design | | |
| Transmitter | | |
| • Compact and remote version | Cable length up to 50 m (164 ft) (in preparation) | |
| Sensor | Flange version | Sandwich version |
| • Integrated temperature measurement | • | • |
| • Reduction of nominal diameter | • | |
| • Pressure and temperature compensation | • | • |
| • Isolation valve | • | |
| • Dual measuring device | • | • |
| **Display** | 4-line graphical display (backlit) with control keys | |
| **Operation** | • Via local display (languages: German, English, French)<br>• Via SIMATIC PDM | |
| **Accuracy** | | |
| Volume flow | | |
| • Liquids | | |
| - Re ≥ 20 000 | ± 0.75 % of measured value | |
| - 10 000 < Re < 20 000 | ± 2.0 % of measured value | |
| • Gases and vapors | | |
| - Re ≥ 20 000 | ± 1.0 % of measured value | |
| - 10 000 < Re < 20 000 | ± 2.0 % of measured value | |
| Mass flow/Corrected volume flow | | |
| • Gases and vapors | | |
| - Re ≥ 20 000 | ± 1.5 % of measured value | |
| - 10 000 < Re < 20 000 | ± 2.5 % of measured value | |
| Mass flow | | |
| • Liquid/water | | |
| - Re ≥ 20 000 | ± 1.5 % of measured value | |
| - 10 000 < Re < 20 000 | ± 2.5 % of measured value | |
| Repeatability (Volume flow) | ± 0.1 % of measured value | |
| **Operating conditions** | | |
| Temperature ratings | | |
| • Medium | -40 … +240 °C (-40 … +465 °F) | |
| • Ambient | | |
| - Non-Ex | -40 … +85 °C (-40… +185 °F) | |
| - Ex | -40 … +65 °C (-40… +140 °F) | |
| • Storage | -50 … +85 °C (-58… +185 °F) | |
| Pressure ratings | Max. 100 bar (1450 psi), higher pressure rates on request | |
| Max. allowable test pressure | | |
| • With integrated pressure sensor and isolation valve (closed) | 1.5 x PN | |
| • With integrated pressure sensor and without isolation valve | 2 times the measuring range of pressure sensor | |
| Process medium | | |
| • Density | Taken into consideration when sizing | |
| • Viscosity | < 10 cP | |
| • Reynold's number | > 10000 | |
| Recommended flow velocities | | |
| • Liquids | 0.3 ... 7 m/s (0.98 ... 23 ft/s) | |
| • Gases and vapors<br>DN 15:<br>DN 25: | 2.0 ... 80 m/s (6.6 ... 262.5 ft/s)<br>3.0 ... 45 m/s (9.8 ... 148 ft/s)<br>2.0 ... 70 m/s (6.6 ... 230 ft/s) | |

| | |
|---|---|
| | For detailed information see operating instructions "Intended use" |
| **Installation conditions** | |
| Inlet run | |
| • For undisturbed flow profile, after pipe section with reducer, after 1 x 90° pipe bend | ≥ 15 x DN |
| • After 2 x 90° pipe bend | ≥ 30 x DN |
| • After 2 x 90° three-dimensional pipe bend | ≥ 40 x DN |
| • After control valves | ≥ 50 x DN |
| • Before flow conditioner | ≥ 2 x DN |
| • After flow conditioner | ≥ 8 x DN |
| Outlet run | ≥ 5 x DN |
| **Material** | |
| Sensor and process connections | |
| • Standard | 1.4404/316L |
| • Option | Hastelloy C22 on request |
| Transmitter housing | Aluminum |
| • Standard | Aluminum die-cast, two-layer coating (epoxy/polyester) |
| • Option | Die-cast aluminum with finish for advanced requirements |
| Pressure sensor gasket | |
| • Standard | FPM |
| • Option | FFKM |
| Sensor gasket (Pick-up) | |
| • Standard | 1.4535/316L |
| • Option | Hastelloy C276 |
| **Process connections** | |
| DIN EN 1092-1 | DN 15 ... DN 300/PN 16 ... PN 100 |
| ANSI B16.5 | ½" ... 12"/150 ... 600 lb |
| | For valid combinations of connection size and pressure rating see table in section Configuration |
| **Enclosure rating** | |
| Standard | Compact and remote version: IP66/IP67 |
| Option | Remote version: IP66/IP68 for sensor |
| **Power supply** | |
| Non-Ex version | 14 … 36 V DC |
| Ex version | 14 … 30 V DC |
| **Inputs/Outputs** | |
| Current output | 4 ... 20 mA, HART |
| Binary output | Pulse/Frequency/Status/Limit switch |
| Current input | 4 ... 20 mA, passive |
| **Communication** | HART 7 |
| **Calibration** | |
| Standard calibration | 3-point calibration:<br>3 x 15 %, 3 x 50 %, 3 x 80 % |
| Special calibration | 5-point calibration:<br>3 x 15 %, 3 x 30 %, 3 x 50 %, 3 x 60 %, 3 x 80 % |
| **Certificates and approvals** | |
| Ex approvals | ATEX, QPS, IECEx |
| CE declaration of conformity | PED 2014/68/EU EMC 2014/30/EU |
| Safety integration level (SIL) | SIL2 according to IEC 61508 |

## Selection and ordering data

| | Article No. |
|---|---|
| **SITRANS FX330 Flanged** | |
| • **Not approved for SIL2 safety applications** ↗ | **7ME2610-** |
| • **Approved for SIL2 safety applications** ↗ | **7ME2611-** |
| | ■■■■■ - ■■■■ |

↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

| | | |
|---|---|---|
| **Sensor size** | **Connection size** | |
| DN 15 (½") | DN 15 (½") | **1 A** |
| | DN 25 (1") | **1 B** |
| | DN 40 (1½") | **1 C** |
| DN 25 (1") | DN 25 (1") | **2 B** |
| | DN 40 (1½") | **2 C** |
| | DN 50 (2") | **2 D** |
| DN 40 (1½") | DN 40 (1½") | **2 K** |
| | DN 50 (2") | **2 L** |
| | DN 80 (3") | **2 M** |
| DN 50 (2") | DN 50 (2") | **2 R** |
| | DN 80 (3") | **2 S** |
| | DN 100 (4") | **2 T** |
| DN 80 (3") | DN 80 (3") | **3 L** |
| | DN 100 (4") | **3 M** |
| | DN 150 (6") | **3 R** |
| DN 100 (4") | DN 100 (4") | **3 S** |
| | DN 150 (6") | **3 T** |
| | DN 200 (8") | **3 Q** |
| DN 150 (6") | DN 150 (6") | **4 M** |
| | DN 200 (8") | **4 P** |
| | DN 250 (10") | **4 Q** |
| DN 200 (8") | DN 200 (8") | **4 T** |
| | DN 250 (10") | **4 U** |
| | DN 300 (12") | **4 V** |
| DN 250 (10") | DN 250 (10") | **4 W** |
| | DN 300 (12") | **4 Y** |
| DN 300 (12") | DN 300 (12") | **5 E** |
| **Process connection and pressure rate** | | |
| **EN 1092-1 Form B1** | | |
| PN 10 | DN 200 ... 300 | **A** |
| PN 16 | DN 50 ... 300 | **B** |
| PN 25 | DN 200 ... 300 | **C** |
| PN 40 | DN 15 ... 300 | **D** |
| PN 63 | DN 50 ... 150 | **E** |
| PN 100 | DN 15 ... 150 | **F** |
| **ANSI B16.5 RF** | | |
| Class 150 | ½ ... 12" | **J** |
| Class 300 | ½ ... 12" | **K** |
| Class 600 | ½ ... 6" | **L** |
| **System design** | | |
| Compact version | No cable | **0** |
| Remote version (in preparation) | Cable length with Order code L.. | **1** |
| **Transmitter housing** | | |
| Aluminum | | **0** |
| Aluminum, silicon free | | **1** |
| Dual version, aluminum | | **6** |
| Dual version, aluminum, silicon free | | **7** |

| | Article No. |
|---|---|
| **SITRANS FX330 Flanged** | |
| • **Not approved for SIL2 safety applications** | **7ME2610-** |
| • **Approved for SIL2 safety applications** | **7ME2611-** |
| | ■■■■■ - ■■■■ |
| **Communication** | |
| HART | **0** |
| PROFIBUS PA | **1** |
| FOUNDATION Fieldbus | **2** |
| **Ex approval** | |
| Without Ex approval | **A** |
| ATEX II2 G Ex ia | **B** |
| ATEX II2 G Ex d | **C** |
| ATEX II3 G Ex nA | **D** |
| ATEX II2 D Ex tb | **E** |
| QPS IS Class I Div.1 | **F** |
| QPS XP Class I Div.1 | **G** |
| QPS NI Class I Div. 2 | **H** |
| QPS DIP Class I, III Div. 1 | **J** |
| IECEx II2 G Ex ia | **K** |
| IECEx II2 G Ex d | **L** |
| IECEx II3 G Ex nA | **M** |
| IECEx II2 D Ex tb | **N** |
| **Pressure sensor and gasket material** | |
| Without pressure sensor | **A** |
| With pressure sensor and gasket material FPM (Viton), Range: | |
| 1 bar (14.5 psi) | **B** |
| 2 bar (29 psi) | **C** |
| 4 bar (58 psi) | **D** |
| 6 bar (87 psi) | **E** |
| 10 bar (145 psi) | **F** |
| 16 bar (232 psi) | **G** |
| 25 bar (363 psi) | **H** |
| 40 bar (580 psi) | **J** |
| 60 bar (870 psi) | **K** |
| 100 bar (1450 psi) | **L** |
| With pressure sensor and gasket material FFKM (Kalrez), Range: | |
| 1 bar (14.5 psi) | **M** |
| 2 bar (29 psi) | **N** |
| 4 bar (58 psi) | **P** |
| 6 bar (87 psi) | **Q** |
| 10 bar (145 psi) | **R** |
| 16 bar (232 psi) | **S** |
| 25 bar (363 psi) | **T** |
| 40 bar (580 psi) | **U** |
| 60 bar (870 psi) | **V** |
| 100 bar (1450 psi) | **W** |
| **Software version** | |
| Standard - Uncompensated for gases, steam and liquids including temperature compensation for saturated steam | **0** |
| Standard + Heat meter for saturated steam and water | **1** |
| Density compensation for steam + Heat meter for saturated and superheated steam | **2** |
| Density compensation for gases, wet gases and mixed gases + FAD | **3** |

3

## Selection and ordering data

| | | Article No. |
|---|---|---|
| **SITRANS FX330 Sandwich** | | |
| **• Not approved for SIL2 safety applications** ↗ | | **7ME2710-** |
| **• Approved for SIL2 safety applications** ↗ | | **7ME2711-** |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| **Sensor size** | | |
| DN 15 (½") | | 1 A |
| DN 25 (1") | | 2 B |
| DN 40 (1½") | | 2 K |
| DN 50 (2") | | 2 R |
| DN 80 (3") | | 3 L |
| DN 100 (4") | | 3 S |
| **Pressure rating** | | |
| EN 1092-1 | | |
| PN 16 | DN 15 ... 100 | B |
| PN 25 | DN 15 ... 100 | C |
| PN 40 | DN 15 ... 100 | D |
| PN 63 | DN 15 ... 100 | E |
| PN 100 | DN 15 ... 100 | F |
| **ANSI B16.5** | | |
| Class 150 | ½ ... 4" | J |
| Class 300 | ½ ... 4" | K |
| Class 600 | ½ ... 4" | L |
| **System design** | | |
| Compact version | No cable | 0 |
| Remote version (in preparation) | Cable length with Order code L.. | 1 |
| **Transmitter housing** | | |
| Aluminum | | 0 |
| Aluminum, silicon free | | 1 |
| **Communication** | | |
| HART | | 0 |
| PROFIBUS PA | | 1 |
| FOUNDATION Fieldbus | | 2 |
| **Ex approval** | | |
| Without Ex approval | | A |
| ATEX II2 G Ex ia | | B |
| ATEX II2 G Ex d | | C |
| ATEX II3 G Ex nA | | D |
| ATEX II2 D Ex tb | | E |
| QPS IS Class I Div.1 | | F |
| QPS XP Class I Div.1 | | G |
| QPS NI Class I Div. 2 | | H |
| QPS DIP Class I, III Div. 1 | | J |
| IECEx II2 G Ex ia | | K |
| IECEx II2 G Ex d | | L |
| IECEx II3 G Ex nA | | M |
| IECEx II2 D Ex tb | | N |

| | Article No. |
|---|---|
| **SITRANS FX330 Sandwich** | |
| **• Not approved for SIL2 safety applications** | **7ME2710-** |
| **• Approved for SIL2 safety applications** | **7ME2711-** |
| **Pressure sensor and gasket material** | |
| Without pressure sensor | A |
| With pressure sensor and gasket material FPM (Viton), Range: | |
| 1 bar (14.5 psi) | B |
| 2 bar (29 psi) | C |
| 4 bar (58 psi) | D |
| 6 bar (87 psi) | E |
| 10 bar (145 psi) | F |
| 16 bar (232 psi) | G |
| 25 bar (363 psi) | H |
| 40 bar (580 psi) | J |
| 60 bar (870 psi) | K |
| 100 bar (1450 psi) | L |
| With pressure sensor and gasket material FFKM (Kalrez), Range: | |
| 1 bar (14.5 psi) | M |
| 2 bar (29 psi) | N |
| 4 bar (58 psi) | P |
| 6 bar (87 psi) | Q |
| 10 bar (145 psi) | R |
| 16 bar (232 psi) | S |
| 25 bar (363 psi) | T |
| 40 bar (580 psi) | U |
| 60 bar (870 psi) | V |
| 100 bar (1450 psi) | W |
| **Software version** | |
| Standard - Uncompensated for gases, steam and liquids including temperature compensation for saturated steam | 0 |
| Standard + Heat meter for saturated steam and water | 1 |
| Density compensation for steam + Heat meter for saturated and superheated steam | 2 |
| Density compensation for gases, wet gases and mixed gases + FAD | 3 |

| *Additional information* | Order code |
|---|---|
| Please add "**-Z**" to Article No. and specify as minimum Order code Y40, Y41, Y42 and Y45 and plain text. | |
| **Application data** | |
| Medium: Specify medium (Liquid, gas, steam or customer-specific) | **Y40** |
| Temperature: Specify operating temperature with unit | **Y41** |
| Pressure: Specify operating pressure with unit | **Y42** |
| Density (only for customer-specified medium): Specify density with unit | **Y43** |
| Viscosity (only for customer-specified medium): Specify viscosity with unit | **Y44** |
| Flow rate: Specify max. flow rate with units | **Y45** |

Operating instruction

| Description | Article No. |
|---|---|
| English | A5E2100423 |

All literature is available to download for free, in a range of languages, at https://intranet.entry.siemens.com

## Selection and ordering data

| | Order code |
|---|---|
| *Further designs* | |
| Please add "**-Z**" to Article No. and specify Order code. | |
| **Cable connection** | |
| Without cable glands | **A01** |
| M20x1.5 cable glands made of plastic, grey | |
| • 3 pcs | **A02** |
| • 2 pcs. | **A12** |
| • 1 pc. | **A22** |
| M20x1.5 cable glands made of plastic, blue | |
| • 3 pcs | **A03** |
| • 2 pcs. | **A13** |
| • 1 pc. | **A23** |
| M20x1.5 cable glands made of brass, Ex-d/t approved | |
| • 3 pcs | **A04** |
| • 2 pcs. | **A14** |
| • 1 pc. | **A24** |
| M20x1.5 cable glands made of brass, Ex-nA approved | |
| • 3 pcs | **A05** |
| • 2 pcs. | **A15** |
| • 1 pc. | **A25** |
| M20x1.5 cable glands in stainless steel, Ex-d/t approved | |
| • 3 pcs | **A06** |
| • 2 pcs. | **A16** |
| • 1 pc. | **A26** |
| 1/2" NPT conduit connection in plastic (cable glands not included) | |
| • 3 pcs | **A07** |
| • 2 pcs. | **A17** |
| • 1 pc. | **A27** |
| **Isolation valve** | |
| With isolation valve | **B10** |
| **Certificates** | |
| Certificate of compliance according to EN 10204-2.1 | **C10** |
| Pressure test + Inspection certificate according to EN 10204-3.1 | **C11** |
| Material certification of pressure bearing metal parts according to EN 10204-3.1 | **C12** |
| Material in accordance with NACE MR0175/ISO 15156 | **C13** |
| PMI of pressure bearing metal parts + Inspection certificate according to EN 10204-3.1 | **C14** |
| Material certificate of pressure bearing metal parts according to EN 10204-3.1 + PMI | **C15** |
| Dye penetration test of wetted welds | **C16** |
| X-ray test of wetted welds | **C17** |

| | Order code |
|---|---|
| **Calibration** | |
| 5-point calibration with certificate | **D11** |
| **Cleaning** | |
| Free of oil and grease (wetted parts) | **K46** |
| Free of oil and grease (wetted parts) + Inspection certificate according to EN 10204-3.1 | **K48** |
| **Cable length for remote version (in preparation)** | |
| 5 m (16 ft) | **L01** |
| 10 m (32 ft) | **L02** |
| 15 m (49 ft) | **L03** |
| 20 m (65 ft) | **L04** |
| 25 m (82 ft) | **L05** |
| 30 m (98 ft) | **L06** |
| 35 m (114 ft) | **L07** |
| 40 m (131 ft) | **L08** |
| 45 m (147 ft) | **L09** |
| 50 m (164 ft) | **L10** |
| **Tag name plate** | |
| TAG name plate in stainless steel 40 × 20mm (Add plain text) | **Y17** |
| TAG name plate in stainless steel tag 120 × 46 mm (Add plain text) | **Y18** |

3

## Selection and ordering data — Article No.

### *SITRANS FX330 spare parts*

| | |
|---|---|
| Transmitter electronic for SITRANS FX330 | |
| • FXT030 in compact design with HART (non-Ex/Ex-i) | **A5E38663070** |
| • FXT030 in compact design with HART (Ex-d) | **A5E38663398** |
| Display with HMI and data memory | **A5E38663613** |
| Seal disc 21.8 x12 x 0.1 | **KRH-17000700** |
| O-ring pickup | **KRH-17001400** |
| O-ring for pressure screw 17.13 x 2.62, FPM 70 | **KRH-17001200** |
| Cover gasket O-ring | **KRH-16000300** |
| Front Cover (non Ex) | **KRH-16002000** |
| Front Cover (Ex) | **KRH-16002500** |
| Back Cover | **KRH-16003000** |
| Converter housing gasket, 59,35,5-2-N | **KRH-16000400** |
| O-ring | |
| • 20 x 1, FPM (DIN 3771) | **KRH-17001100** |
| • 10 x 2, NBR | **KRH-17001000** |
| DUBOX plug 5 pole, linear, RM2 | **KRH-17000800** |
| Cable feed through 10 pole (non Ex) | **KRH-16000500** |
| Shut-off valve | **KRH-17004000** |
| Centering rings for Sandwich-Version | |
| • DN 15 | **KRH-17006000** |
| • DN 25 | **KRH-17006001** |
| • DN 40 | **KRH-17006002** |
| • DN 50 | **KRH-17006003** |
| • DN 50 (300 lbs, 600 lbs) | **KRH-17006004** |
| • DN 50 (JIS 10K, 16K, 20K) | **KRH-17006005** |
| • DN 80 | **KRH-17006006** |
| • DN 100 | **KRH-17006007** |
| Wall housing incl. Neck (incl. Screws, Gaskets and cable glands) | **KRH-16112002** |
| Sensor replacement kit including seal disc, socket, pickup and O-rings (for pickup and pressure screw) | |
| • DN 15 | **KRH-16111100** |
| • DN 15 Conical | **KRH-16111110** |
| • DN 25 | **KRH-16111150** |
| • DN 25 Conical | **KRH-16111160** |
| • DN 40 | **KRH-16111200** |
| • DN 50 | **KRH-16111210** |
| • DN 80 | **KRH-16111220** |
| • DN 100 | **KRH-16111230** |
| • DN 150 ... DN 300 | **KRH-16111300** |
| Pressure sensor replacement kit including pressure sensor with calibration certificate, DUBOX plug and O-rings | |
| • 1 bar | **KRH-16111350** |
| • 2 bar | **KRH-16111370** |
| • 4 bar | **KRH-16111400** |
| • 6 bar | **KRH-16111401** |
| • 10 bar | **KRH-16111402** |
| • 16 bar | **KRH-16111403** |
| • 25 bar | **KRH-16111404** |
| • 40 bar | **KRH-16111405** |
| • 60 bar | **KRH-16111406** |
| • 100 bar | **KRH-16111407** |
| SITRANS FX300 upgrade kit (in preparation) | |

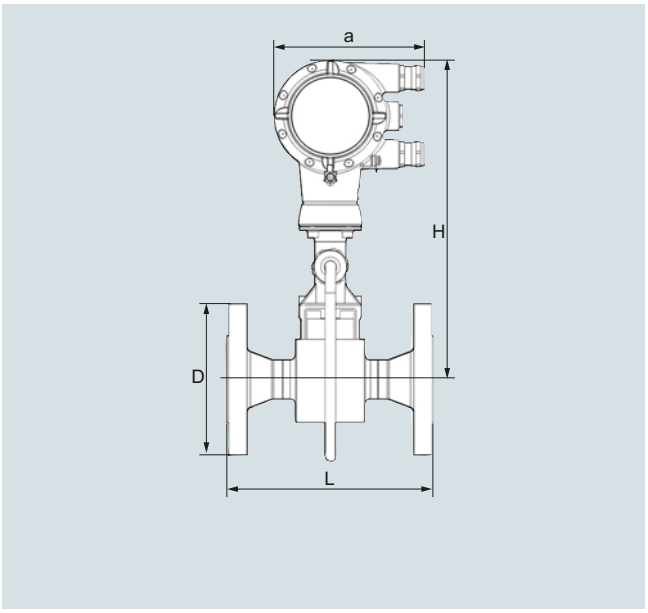
## Article No.

| **SITRANS FX330 Flow Straightener** ↗ | **7ME2900-** ■ ■ ■ **0 0** |
|---|---|
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| **Material** | |
| Stainless steel 1.4404 (316L) | **1** |
| **Nominal size** | |
| DN 15 / ANSI ½" | **A** |
| DN 25 / ANSI 1" | **B** |
| DN 40 / ANSI 1½" | **C** |
| DN 50 / ANSI 2" | **D** |
| DN 80 / ANSI 3" | **E** |
| DN 100 / ANSI 4" | **F** |
| DN 150 / ANSI 6" | **G** |
| DN 200 / ANSI 8" | **H** |
| DN 250 / ANSI 10" | **J** |
| DN 300 / ANSI 12" | **K** |
| **Pressure rating** | |
| PN 10 | **A** |
| PN 16 | **B** |
| PN 25 | **C** |
| PN 40 | **D** |
| PN 63 | **E** |
| PN 100 | **F** |
| Class 150 | **J** |
| Class 300 | **K** |
| Class 600 | **L** |

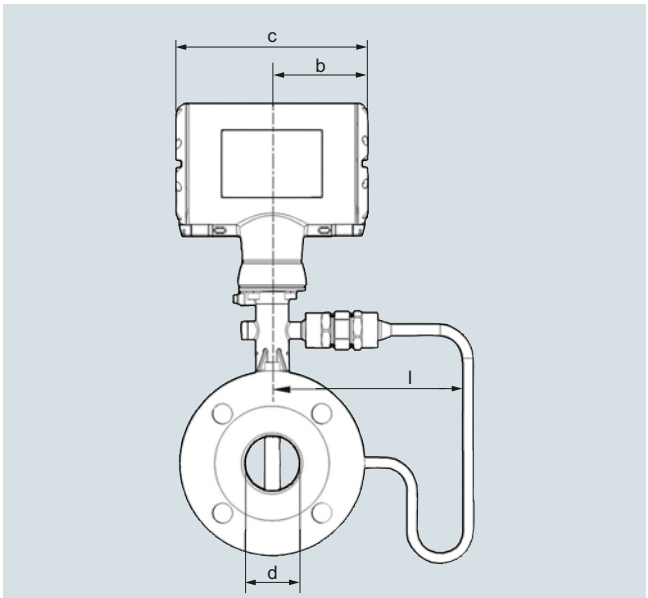
| *Additional information* | Order code |
|---|---|
| Please add "**-Z**" to Article No. and specify Order code. | |
| **Certificates** | |
| Certificate of compliance to EN 10204-2.1 | **C10** |
| Material certification of pressure bearing parts to EN 10204-3.1 | **C12** |
| Material in accordance with NACE MR0175/ISO 15156 | **C13** |
| PMI of pressure bearing parts + Inspection certificate according to EN 10204-3.1 | **C14** |
| Material certificate of pressure bearing parts according to EN 10204-3.1 + PMI | **C15** |
| **Cleaning** | |
| Free of oil and grease (wetted parts) | **K46** |
| Free of oil and grease (wetted parts) + Inspection certificate according to EN 10204-3.1 | **K48** |

## Dimensional drawings

Compact version




SITRANS FX330 (Vortex), Flanged version with pressure sensor, front view




SITRANS FX330 (Vortex), Flanged version with pressure sensor, side view

## Dimensional drawings (continued)

***Flange version EN 1092-1***

| Size | Pressure rating | Dimensions [mm (inch)] a = 148.5 (5.85), b = 85.8 (3.38), c = 171.5 (6.76) | | | | | | | Weight [kg (lb)] | |
|---|---|---|---|---|---|---|---|---|---|---|
| DN | PN | d | d FR[1)] | d FR[2)] | D | L | H | I | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| 15 | 40 | 17.3 (0.68) | - | - | 95 (3.74) | 200 (7.87) | 358.8 (14.2) | 169.3 (6.67) | 5.5 (12.13) | 6.1 (13.45) |
| 15 | 100 | 17.3 (0.68) | - | - | 105 (4.13) | 200 (7.87) | 358.8 (14.2) | 169.3 (6.67) | 6.5 (14.33) | 7.1 (15.65) |
| 25 | 40 | 28.5 (1.12) | 17.3 (0.68) | - | 115 (4.53) | 200 (7.87) | 358.4 (14.1) | 169.3 (6.67) | 7.3 (16.09) | 7.9 (17.42) |
| 25 | 100 | 28.5 (1.12) | 17.3 (0.68) | - | 140 (5.51) | 200 (7.87) | 358.4 (14.1) | 169.3 (6.67) | 9.3 (20.50) | 9.9 (21.83) |
| 40 | 40 | 43.1 (1.70) | 28.5 (1.12) | 17.3 (0.68) | 150 (5.91) | 200 (7.87) | 362.3 (14.3) | 169.5 (6.67) | 10.2 (22.49) | 10.8 (23.81) |
| 40 | 100 | 42.5 (1.67) | 28.5 (1.12) | 17.3 (0.68) | 170 (6.69) | 200 (7.87) | 362.3 (14.3) | 169.5 (6.67) | 14.2 (31.31) | 14.8 (32.63) |
| 50 | 16 | 54.5 (2.15) | 42.5 (1.67) | 28.5 (1.12) | 165 (6.50) | 200 (7.87) | 368.3 (14.5) | 169.3 (6.67) | 12.1 (26.68) | 12.7 (28.00) |
| 50 | 40 | 54.5 (2.15) | 42.5 (1.67) | 28.5 (1.12) | 165 (6.50) | 200 (7.87) | 368.3 (14.5) | 169.3 (6.67) | 12.3 (27.12) | 12.9 (28.44) |
| 50 | 63 | 54.5 (2.15) | 42.5 (1.67) | 28.5 (1.12) | 180 (7.09) | 200 (7.87) | 368.3 (14.5) | 169.3 (6.67) | 16.3 (35.94) | 16.9 (37.26) |
| 50 | 100 | 53.9 (2.12) | 42.5 (1.67) | 28.5 (1.12) | 195 (7.68) | 200 (7.87) | 368.3 (14.5) | 169.3 (6.67) | 17.8 (39.24) | 18.4 (40.57) |
| 80 | 16 | 82.5 (3.25) | 54.5 (2.15) | 42.5 (1.67) | 200 (7.87) | 200 (7.87) | 380.3 (15.0) | 169.3 (6.67) | 16.8 (37.04) | 17.4 (38.36) |
| 80 | 40 | 82.5 (3.25) | 54.5 (2.15) | 42.5 (1.67) | 200 (7.87) | 200 (7.87) | 380.3 (15.0) | 169.3 (6.67) | 18.8 (41.45) | 19.4 (42.77) |
| 80 | 63 | 81.7 (3.22) | 54.5 (2.15) | 42.5 (1.67) | 215 (8.46) | 200 (7.87) | 380.3 (15.0) | 169.3 (6.67) | 22.8 (50.27) | 23.4 (51.59) |
| 80 | 100 | 80.9 (3.19) | 54.5 (2.15) | 42.5 (1.67) | 230 (9.06) | 200 (7.87) | 380.3 (15.0) | 169.3 (6.67) | 26.8 (59.08) | 27.4 (60.41) |
| 100 | 16 | 107 (4.21) | 80.9 (3.19) | 54.5 (2.15) | 220 (8.66) | 250 (9.84) | 396.8 (15.7) | 171.5 (6.75) | 21.4 (47.18) | 22 (48.50) |
| 100 | 40 | 107 (4.21) | 80.9 (3.19) | 54.5 (2.15) | 235 (9.25) | 250 (9.84) | 396.8 (15.7) | 171.5 (6.75) | 24.4 (53.79) | 25 (55.12) |
| 100 | 63 | 106 (4.17) | 80.9 (3.19) | 54.5 (2.15) | 250 (9.84) | 250 (9.84) | 396.8 (15.7) | 171.5 (6.75) | 29.4 (64.82) | 30 (66.14) |
| 100 | 100 | 104 (4.09) | 80.9 (3.19) | 54.5 (2.15) | 265 (10.43) | 250 (9.84) | 396.8 (15.7) | 171.5 (6.75) | 35.4 (78.04) | 36 (79.37) |
| 150 | 16 | 159 (6.26) | 107 (4.21) | 80.9 (3.19) | 285 (11.22) | 300 (11.81) | 416.3 (16.4) | 191.5 (7.54) | 35.2 (77.60) | 35.8 (78.93) |
| 150 | 40 | 159 (6.26) | 107 (4.21) | 80.9 (3.19) | 300 (11.81) | 300 (11.81) | 416.3 (16.4) | 191.5 (7.54) | 41.2 (90.83) | 41.8 (92.15) |
| 150 | 63 | 157 (6.18) | 107 (4.21) | 80.9 (3.19) | 345 (13.58) | 300 (11.81) | 416.3 (16.4) | 191.5 (7.54) | 59.2 (130.51) | 59.8 (131.84) |
| 150 | 100 | 154 (6.06) | 107 (4.21) | 80.9 (3.19) | 355 (13.98) | 300 (11.81) | 416.3 (16.4) | 191.5 (7.54) | 67.2 (148.15) | 67.8 (149.47) |
| 200 | 10 | 207 (8.15) | 159 (6.26) | 107 (4.21) | 340 (13.39) | 300 (11.81) | 442.1 (17.4) | 202.8 (7.98) | 37.8 (83.33) | 38.4 (84.66) |
| 200 | 16 | 207 (8.15) | 159 (6.26) | 107 (4.21) | 340 (13.39) | 300 (11.81) | 442.1 (17.4) | 202.8 (7.98) | 37.8 (83.33) | 38.4 (84.66) |
| 200 | 25 | 207 (8.15) | 159 (6.26) | 107 (4.21) | 360 (14.17) | 300 (11.81) | 442.1 (17.4) | 202.8 (7.98) | 46.8 (103.18) | 47.4 (104.50) |
| 200 | 40 | 207 (8.15) | 159 (6.26) | 107 (4.21) | 375 (14.76) | 300 (11.81) | 442.1 (17.4) | 202.8 (7.98) | 54.8 (120.81) | 55.4 (122.14) |
| 250 | 10 | 260 (10.24) | 207 (8.15) | 159.3 (6.27) | 395 (15.55) | 380 (14.96) | 468.8 (18.5) | 229.5 (9.04) | 57.4 (126.55) | 58.0 (127.87) |
| 250 | 16 | 260 (10.24) | 207 (8.15) | 159.3 (6.27) | 405 (15.94) | 380 (14.96) | 468.8 (18.5) | 229.5 (9.04) | 58.4 (128.75) | 59.0 (130.07) |
| 250 | 25 | 259 (10.20) | 207 (8.15) | 159.3 (6.27) | 425 (16.73) | 380 (14.96) | 468.8 (18.5) | 229.5 (9.04) | 74.4 (164.02) | 75.0 (165.35) |
| 250 | 40 | 259 (10.20) | 207 (8.15) | 159.3 (6.27) | 450 (17.72) | 380 (14.96) | 468.8 (18.5) | 229.5 (9.04) | 92.4 (203.71) | 93.0 (205.03) |
| 300 | 10 | 310 (12.20) | 260 (10.24) | 207 (8.15) | 445 (17.52) | 450 (17.72) | 492.8 (19.4) | 255 (10.04) | 75.7 (166.89) | 76.3 (168.21) |
| 300 | 16 | 310 (12.20) | 260 (10.24) | 207 (8.15) | 460 (18.11) | 450 (17.72) | 492.8 (19.4) | 255 (10.04) | 82.2 (181.22) | 82.8 (182.54) |
| 300 | 25 | 308 (12.13) | 260 (10.24) | 207 (8.15) | 485 (19.09) | 450 (17.72) | 492.8 (19.4) | 255 (10.04) | 98.7 (217.60) | 99.3 (218.92) |
| 300 | 40 | 308 (12.13) | 260 (10.24) | 207 (8.15) | 515 (20.28) | 450 (17.72) | 492.8 (19.4) | 255 (10.04) | 127.5 (281.09) | 128.1 (282.41) |

1) FR - single reduction

2) F2R - double reduction

## Dimensional drawings (continued)

### *Flange version ANSI B16.5*

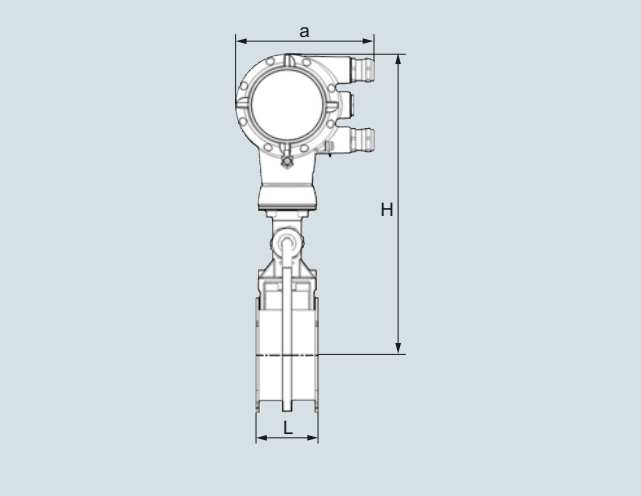
| Size | Pressure rating | Dimensions [mm (inch)] a = 148.5 (5.85), b = 85.8 (3.38), c = 171.5 (6.76) | | | | | | | Weight [kg (lb)] | |
|---|---|---|---|---|---|---|---|---|---|---|
| DN | Class | d | d FR[1)] | d FR[2)] | D | L | H | I | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| ½ | 150 | 16 (0.63) | - | - | 90 (3.5) | 200 (7.9) | 358.8 (14.2) | 169.3 (6.67) | 4.5 (9.92) | 5.1 (11.24) |
| ½ | 300 | 16 (0.63) | - | - | 95 (3.7) | 200 (7.9) | 358.8 (14.2) | 169.3 (6.67) | 4.9 (10.80) | 5.5 (12.13) |
| ½ | 600 | 14 (0.55) | - | - | 95 (3.7) | 200 (7.9) | 358.8 (14.2) | 169.3 (6.67) | 5.1 (11.24) | 5.7 (12.57) |
| 1 | 150 | 27 (1.1) | 15.8 (0.62) | - | 110 (4.3) | 200 (7.9) | 358.4 (14.1) | 169.3 (6.67) | 6.2 (13.67) | 6.8 (14.99) |
| 1 | 300 | 27 (1.1) | 15.8 (0.62) | - | 125 (4.9) | 200 (7.9) | 358.4 (14.1) | 169.3 (6.67) | 7.2 (15.87) | 7.8 (17.20) |
| 1 | 600 | 24 (1.0) | 15.8 (0.62) | - | 125 (4.9) | 200 (7.9) | 358.4 (14.1) | 169.3 (6.67) | 7.5 (16.53) | 8.1 (17.86) |
| 1½ | 150 | 41 (1.6) | 26.6 (1.1) | 15.8 (0.6) | 125 (4.9) | 200 (7.9) | 362.3 (14.3) | 169.5 (6.67) | 8.3 (18.30) | 8.9 (19.62) |
| 1½ | 300 | 41 (1.6) | 26.6 (1.1) | 15.8 (0.6) | 155 (6.1) | 200 (7.9) | 362.3 (14.3) | 169.5 (6.67) | 10.4 (22.93) | 11 (24.25) |
| 1½ | 600 | 38 (1.5) | 26.6 (1.1) | 15.8 (0.6) | 155 (6.1) | 200 (7.9) | 362.3 (14.3) | 169.5 (6.67) | 11.4 (25.13) | 12 (26.46) |
| 2 | 150 | 53 (2.1) | 40.9 (1.6) | 26.6 (1.1) | 150 (5.9) | 200 (7.9) | 368.3 (14.5) | 169.5 (6.67) | 11 (24.25) | 11.6 (25.57) |
| 2 | 300 | 53 (2.1) | 40.9 (1.6) | 26.6 (1.1) | 165 (6.5) | 200 (7.9) | 368.3 (14.5) | 169.5 (6.67) | 12.4 (27.34) | 13 (28.66) |
| 2 | 600 | 49 (1.9) | 40.9 (1.6) | 26.6 (1.1) | 165 (6.5) | 200 (7.9) | 368.3 (14.5) | 169.5 (6.67) | 13.9 (30.64) | 14.5 (31.97) |
| 3 | 150 | 78 (3.1) | 52.6 (2.1) | 40.9 (1.6) | 190 (7.5) | 200 (7.9) | 380.3 (15.0) | 169.3 (6.67) | 19.8 (43.65) | 20.4 (44.97) |
| 3 | 300 | 78 (3.1) | 52.6 (2.1) | 40.9 (1.6) | 210 (8.3) | 200 (7.9) | 380.3 (15.0) | 169.3 (6.67) | 22.8 (50.27) | 23.4 (51.59) |
| 3 | 600 | 74 (2.9) | 52.6 (2.1) | 40.9 (1.6) | 210 (8.3) | 200 (7.9) | 380.3 (15.0) | 169.3 (6.67) | 23.8 (52.47) | 24.4 (53.79) |
| 4 | 150 | 102 (4.0) | 78 (3.1) | 52.6 (2.1) | 230 (9.1) | 250 (9.8) | 396.8 (15.7) | 171.5 (6.76) | 23.4 (51.59) | 24 (52.91) |
| 4 | 300 | 102 (4.0) | 78 (3.1) | 52.6 (2.1) | 255 (10) | 250 (9.8) | 396.8 (15.7) | 171.5 (6.76) | 31.4 (69.23) | 32 (70.55) |
| 4 | 600 | 97 (3.8) | 78 (3.1) | 52.6 (2.1) | 275 (11) | 250 (9.8) | 396.8 (15.7) | 171.5 (6.76) | 40.4 (89.07) | 41 (90.39) |
| 6 | 150 | 154 (6.1) | 102 (4.0) | 78.0 (3.1) | 280 (11) | 300 (12) | 416.3 (16.4) | 191.5 (7.54) | 36.2 (79.81) | 36.8 (81.13) |
| 6 | 300 | 154 (6.1) | 102 (4.0) | 78.0 (3.1) | 320 (13) | 300 (12) | 416.3 (16.4) | 191.5 (7.54) | 51.2 (112.88) | 51.8 (114.20) |
| 6 | 600 | 146 (5.8) | 102 (4.0) | 78.0 (3.1) | 355 (14) | 300 (12) | 416.3 (16.4) | 191.5 (7.54) | 76.2 (167.99) | 76.8 (169.31) |
| 8 | 150 | 203 (8.0) | 154 (6.1) | 102 (4.0) | 345 (14) | 300 (12) | 442.1 (17.4) | 202.8 (8.0) | 50.0 (110.23) | 50.6 (111.55) |
| 8 | 300 | 203 (8.0) | 154 (6.1) | 102 (4.0) | 380 (15) | 300 (12) | 442.1 (17.4) | 202.8 (8.0) | 74.8 (164.91) | 75.4 (166.23) |
| 10 | 150 | 255 (10.0) | 203 (8.0) | 154 (6.1) | 405 (16) | 380 (15) | 468.8 (18.5) | 229.5 (9.04) | 74.4 (164.02) | 75.0 (165.35) |
| 10 | 300 | 255 (10.0) | 203 (8.0) | 154 (6.1) | 455 (18) | 380 (15) | 468.8 (18.5) | 229.5 (9.04) | 106.4 (234.57) | 107.0 (235.89) |
| 12 | 150 | 305 (12.0) | 255 (10.0) | 203 (8.0) | 485 (19) | 450 (18) | 492.8 (19.4) | 255 (10.0) | 106.4 (234.35) | 107.0 (235.67) |
| 12 | 300 | 305 (12.0) | 255 (10.0) | 203 (8.0) | 520 (21) | 450 (18) | 492.8 (19.4) | 255 (10.0) | 151.4 (333.56) | 152.0 (334.88) |

[1)] FR - single reduction

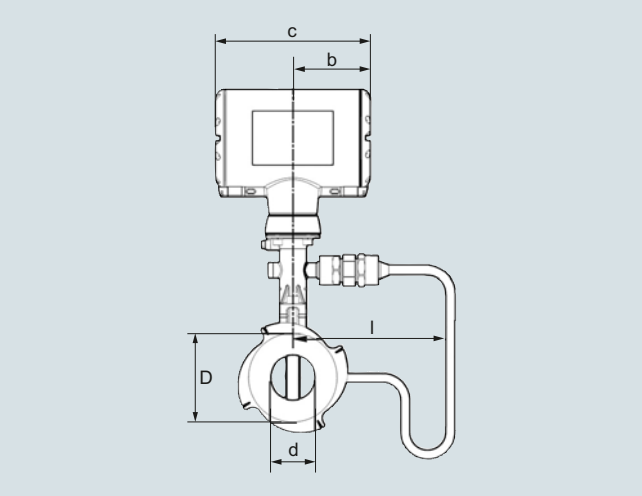
[2)] F2R - double reduction

3

## Dimensional drawings (continued)




SITRANS FX330 (Vortex), Sandwich version with pressure sensor, front view




SITRANS FX330 (Vortex), Sandwich version with pressure sensor, side view

### *Sandwich version EN*

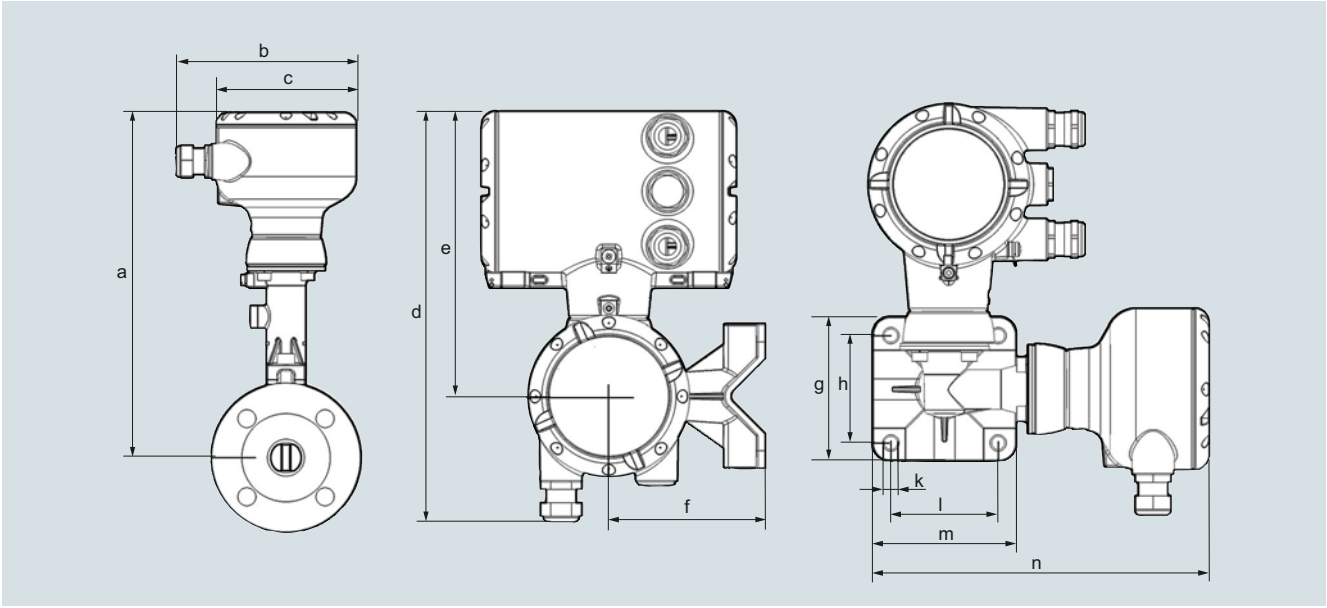
| Size | Pressure rating | Dimensions [mm (inch)] | | | | | | | | Weight [kg (lb)] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | PN | a | b | c | d | D | L | H | l | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| 15 | 16 ... 100 | 133 (5.24) | 105 (4.13) | 179 (7.05) | 16 (0.63) | 45 (1.77) | 65 (2.56) | 265 (10.43) | 174.25 (6.86) | 3.5 (7.72) | 4.1 (9.04) |
| 25 | 16 ... 100 | 133 (5.24) | 105 (4.13) | 179 (7.05) | 24 (0.94) | 65 (2.56) | 65 (2.56) | 265 (10.43) | 174.25 (6.86) | 4.3 (9.48) | 4.9 (10.80) |
| 40 | 16 ... 100 | 133 (5.24) | 105 (4.13) | 179 (7.05) | 38 (1.50) | 82 (3.23) | 65 (2.56) | 270 (10.63) | 174.5 (6.87) | 4.9 (10.80) | 5.5 (12.13) |
| 50 | 16 ... 100 | 133 (5.24) | 105 (4.13) | 179 (7.05) | 50 (1.97) | 102 (4.02) | 65 (2.56) | 275 (10.83) | 174.5 (6.87) | 6 (13.23) | 6.6 (14.55) |
| 80 | 16 ... 100 | 133 (5.24) | 105 (4.13) | 179 (7.05) | 74 (2.91) | 135 (5.31) | 65 (2.56) | 290 (11.42) | 174.25 (6.86) | 8.2 (18.08) | 8.8 (19.40) |
| 100 | 16 ... 100 | 133 (5.24) | 105 (4.13) | 179 (7.05) | 97 (3.82) | 158 (6.22) | 65 (2.56) | 310 (12.20) | 176.5 (6.95) | 9.5 (20.94) | 10.1 (22.27) |

### *Sandwich version ANSI*

| Size | Pressure rating | Dimensions [inch] | | | | | | | | Weight [lb] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DN | Class | a | b | c | d | D | L | H | l | Flowmeter (without pressure sensor) | Flowmeter (with pressure sensor) |
| ½" | 150, 300 | 5.32 | 4.26 | 7.25 | 0.63 | 1.77 | 2.56 | 10.43 | 6.82 | 7.72 | 9.04 |
| ½" | 600 | 5.32 | 4.26 | 7.25 | 0.55 | 1.77 | 2.56 | 10.43 | 6.82 | 7.72 | 9.04 |
| 1" | 150, 300, 600 | 5.32 | 4.26 | 7.25 | 0.94 | 2.56 | 2.56 | 10.43 | 6.82 | 9.48 | 10.80 |
| 1½" | 150, 300, 600 | 5.32 | 4.26 | 7.25 | 1.50 | 3.23 | 2.56 | 10.63 | 6.82 | 10.80 | 12.13 |
| 2" | 150, 300, 600 | 5.32 | 4.26 | 7.25 | 1.97 | 4.02 | 2.56 | 10.83 | 6.82 | 13.23 | 14.55 |
| 3" | 150, 300, 600 | 5.32 | 4.26 | 7.25 | 2.91 | 5.31 | 2.56 | 11.42 | 6.82 | 18.08 | 19.40 |
| 4" | 150, 300, 600 | 5.32 | 4.26 | 7.25 | 3.82 | 6.22 | 2.56 | 12.20 | 6.82 | 20.94 | 22.27 |

## Dimensional drawings (continued)

Remote version




SITRANS FX330 (Vortex), Remote version

### *Dimension a*

| | Flanged and Sandwich version | | | | | | Flanged version | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | **15** | **25** | **40** | **50** | **80** | **100** | **150** | **200** | **250** | **300** |
| | **½"** | **1"** | **1½"** | **2"** | **3"** | **4"** | **6"** | **8"** | **10"** | **12"** |
| [mm] | 265.7 | 265.2 | 269.2 | 275.2 | 287.2 | 303.7 | 323.2 | 348.9 | 375.7 | 399.7 |
| [inch] | 10.5 | 10.4 | 10.6 | 10.8 | 11.3 | 12.0 | 12.7 | 13.7 | 14.8 | 15.7 |

### *Dimension a F1/2R*

| | Flanged version | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **DN** | **15** | **25** | **40** | **50** | **80** | **100** | **150** | **200** | **250** | **300** |
| | **½"** | **1"** | **1½"** | **2"** | **3"** | **4"** | **6"** | **8"** | **10"** | **12"** |
| F1R[1] [mm] | - | 315.7 | 315.2 | 319.2 | 325.2 | 337.2 | 353.7 | 373.2 | 398.9 | 425.7 |
| F1R[1] [inch] | - | 12.4 | 12.4 | 12.6 | 12.8 | 13.3 | 13.9 | 14.7 | 15.7 | 16.8 |
| F2R[2] [mm] | - | - | 315.7 | 315.2 | 319.2 | 325.2 | 337.2 | 353.7 | 373.2 | 398.9 |
| F2R[2] [inch] | - | - | 12.4 | 12.4 | 12.6 | 12.8 | 13.3 | 13.9 | 14.7 | 15.7 |

### *Dimension b ... n*

| | b | c | d | e | f | g | h | j | k | l | m | n |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [mm] | 139 | 108 | 276 | 191 | 105 | 97 | 72 | 108 | 9 | 72 | 97 | 226 |
| [inch] | 5.46 | 4.25 | 10.9 | 7.53 | 4.14 | 3.82 | 2.84 | 4.25 | 0.35 | 2.84 | 3.82 | 8.90 |

## Dimensional drawings (continued)

### *Flow tables*

Measuring Range Limits

***Water***

| Size DN to EN 1092-1 | DN to NSI B16.5 | $Q_{min}$ EN 1092-1 [$m^3/h$] | $Q_{max}$ EN 1092-1 [$m^3/h$] | $Q_{min}$ ANSI B16.5 [$m^3/h$] | $Q_{max}$ ANSI B16.5 [$m^3/h$] |
|---|---|---|---|---|---|
| 15 | ½" | 0.45 | 5.07 | 0.44 | 4.94 |
| 25 | 1" | 0.81 | 11.40 | 0.81 | 11.40 |
| 40 | 1½" | 2.04 | 28.58 | 2.04 | 28.58 |
| 50 | 2" | 3.53 | 49.48 | 3.53 | 49.48 |
| 80 | 3" | 7.74 | 108.37 | 7.74 | 108.37 |
| 100 | 4" | 13.30 | 186.22 | 13.30 | 186.21 |
| 150 | 6" | 30.13 | 421.86 | 30.13 | 421.86 |
| 200 | 8" | 56.60 | 792.42 | 56.60 | 792.42 |
| 250 | 10" | 90.48 | 1 266.8 | 90.48 | 1 266.8 |
| 300 | 12" | 131.41 | 1 839.8 | 131.41 | 1 839.8 |

Values based on water at 20 °C (68 °F)

***Air***

| Size DN to EN 1092-1 | DN to ANSI B16.5 | $Q_{min}$ EN 1092-1 [$m^3/h$] | $Q_{max}$ EN 1092-1 [$m^3/h$] | $Q_{min}$ ANSI B16.5 [$m^3/h$] | $Q_{max}$ ANS B16.5 [$m^3/h$] |
|---|---|---|---|---|---|
| 15 | ½" | 6.80 | 25.33 | 6.72 | 24.70 |
| 25 | 1" | 10.20 | 81.43 | 10.20 | 81.43 |
| 40 | 1½" | 25.35 | 326.63 | 25.35 | 326.63 |
| 50 | 2" | 43.89 | 565.49 | 43.89 | 565.49 |
| 80 | 3" | 96.14 | 1 238.64 | 96.14 | 1 238.6 |
| 100 | 4" | 165.19 | 2 128.27 | 165.19 | 2 128.27 |
| 150 | 6" | 374.23 | 4 821.60 | 374.23 | 4 821.6 |
| 200 | 8" | 702.95 | 9 056.8 | 702.95 | 9 056.8 |
| 250 | 10" | 1 123.7 | 14 478.0 | 1 123.7 | 14 478.0 |
| 300 | 12" | 1 632.1 | 21 028.0 | 1 632.1 | 21 028.0 |

Values based on air at 20 °C (68 °F) and 1.013 $bar_{abs}$ (14.7 $psi_{abs}$)

Flow rate limits

| Product | Nominal sizes to EN | to ANSI | Minimum flow rates [m/s] | Maximum flow rates [m/s] |
|---|---|---|---|---|
| Liquids | DN 15 … DN 300 | DN ½"…DN 12" | $0.5 \times (998/\rho)^{0.51)}$ | $7 \times (998/\rho)^{0.47\ 1)}$ |
| Gas, steam/vapor | DN 15 … DN 300 | DN ½"…DN 12" | $6 \times (1.29/\rho)^{0.52)}$ | $7 \times (998/\rho)^{0.47\ 3)}$ |

$\rho$ = operating density [$kg/m^3$]

1) Minimum flow rate 0.3 m/s (0.984 ft/s) - maximum flow rate 7 m/s (23 ft/s)

2) Minimum flow rate 2 m/s (6.6 ft/s)

3) Maximum flow rate 80 m/s (262 ft/s); DN 15: 45 m/s (148 ft/s) and DN 25: 70 m/s (230 ft/s)

## Dimensional drawings (continued)

Measuring range saturated steam: 1 to 7 bar

| **Overpressure [bar]** | | **1** | | **3.5** | | **5.2** | | **7** | |
|---|---|---|---|---|---|---|---|---|---|
| **Density [kg/m³]** | | **1.13498** | | **2.4258** | | **3.27653** | | **4.16732** | |
| **Temperature [°C]** | | **120.6** | | **148.2** | | **160.4** | | **170.6** | |
| **Flow [kg/h]** | | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** |
| **DN to EN 1092-1** | **DN to ASME B16.5** | | | | | | | | |
| 15 | ½" | 5.87 | 28.75 | 7.68 | 61.46 | 8.93 | 83.01 | 10.06 | 105.57 |
| 25 | 1" | 11.82 | 92.42 | 17.28 | 197.53 | 20.09 | 266.81 | 22.66 | 339.35 |
| 40 | 1½" | 29.64 | 370.71 | 43.33 | 792.33 | 50.63 | 1 070.2 | 56.80 | 1 361.2 |
| 50 | 2" | 51.31 | 641.82 | 75.02 | 1 371.8 | 87.19 | 1 852.8 | 98.33 | 2 356.6 |
| 80 | 3" | 112.41 | 1 405.8 | 164.33 | 3 004.7 | 191.00 | 4 058.4 | 215.39 | 5 161.8 |
| 100 | 4" | 193.14 | 2 415.5 | 282.36 | 5 162.7 | 328.16 | 6 973.3 | 370.09 | 8 869.2 |
| 150 | 6" | 437.56 | 5 472.4 | 639.69 | 11 696.0 | 743.45 | 15 798.0 | 838.44 | 20 093.0 |
| 200 | 8" | 821.9 | 10 279.0 | 1 201.6 | 21 970.0 | 1 396.5 | 29 675.0 | 1 574.9 | 37 743.0 |
| 250 | 10" | 1 313.9 | 16 433.0 | 1 920.9 | 35 122.0 | 2 232.5 | 47 439.0 | 2 517.7 | 60 337.0 |
| 300 | 12" | 1 908.3 | 23 866.0 | 2 789.8 | 51 010.0 | 3 242.4 | 68 899.0 | 3 656.6 | 87 630.0 |

Measuring range saturated steam: 10.5 to 20 bar

| **Overpressure [bar]** | | **10.5** | | **14.0** | | **17.5** | | **20.0** | |
|---|---|---|---|---|---|---|---|---|---|
| **Density [kg/m³]** | | **5.88803** | | **7.60297** | | **9.31702** | | **10.5442** | |
| **Temperature [°C]** | | **186.2** | | **198.5** | | **208.7** | | **215.0** | |
| **Flow [kg/h]** | | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** | **min.** | **max.** |
| **DN to EN 1092-1** | **DN to ANSI B16.5** | | | | | | | | |
| 15 | ½" | 12.78 | 149.17 | 16.51 | 192.61 | 20.23 | 236.04 | 22.89 | 267.12 |
| 25 | 1" | 26.93 | 479.46 | 30.60 | 619.11 | 33.87 | 758.69 | 36.04 | 858.62 |
| 40 | 1½" | 67.51 | 1 878.2 | 76.72 | 2 150.7 | 84.93 | 2 395.3 | 90.35 | 2 557.7 |
| 50 | 2" | 116.89 | 3 251.7 | 132.82 | 3 723.4 | 147.03 | 4 147.0 | 156.42 | 4 428.1 |
| 80 | 3" | 256.03 | 7 122.4 | 290.93 | 8 155.8 | 322.06 | 9 083.7 | 342.62 | 9 699.3 |
| 100 | 4" | 439.91 | 12 238 | 499.90 | 14 013.0 | 553.38 | 15 608.0 | 588.69 | 16 666.0 |
| 150 | 6" | 996.62 | 27 725.0 | 1 132.5 | 31 747.0 | 1 253.7 | 35 359.0 | 1 333.7 | 37 756.0 |
| 200 | 8" | 1 872.1 | 52 079.0 | 2 127.3 | 59 634.0 | 2 354.9 | 66 419.0 | 2 505.2 | 70 921.0 |
| 250 | 10" | 2 992.7 | 83 254.0 | 3 400.7 | 95 333.0 | 3 764.6 | 106 180.0 | 4 004.9 | 113 380.0 |
| 300 | 12" | 4 346.5 | 120 920.0 | 4 939.1 | 138 460.0 | 5 467.5 | 154 210.0 | 5 816.5 | 164 660.0 |

3

## Dimensional drawings (continued)

Measuring range saturated steam: 15 to 100 psig

| Overpressure [psig] | | 15 | | 50 | | 75 | | 100 | |
|---|---|---|---|---|---|---|---|---|---|
| Density [lbs/ft³] | | 0.0719 | | 0.1497 | | 0.2036 | | 0.2569 | |
| Temperature [°F] | | 249.98 | | 297.86 | | 320.36 | | 338.184 | |
| Flow [lbs/h] | | min. | max. | min. | max. | min. | max. | min. | max. |
| DN to EN 1092-1 | DN to ANSI B16.5 | | | | | | | | |
| 15 | ½" | 12.95 | 64.35 | 16.83 | 133.87 | 19.62 | 182.02 | 22.04 | 229.63 |
| 25 | 1" | 26.25 | 206.83 | 37.86 | 430.30 | 44.15 | 585.06 | 49.59 | 738.09 |
| 40 | 1½" | 65.81 | 829.61 | 94.92 | 1 726 | 110.68 | 2 346.7 | 124.32 | 2 960.5 |
| 50 | 2" | 113.94 | 1 436.3 | 164.34 | 2 988 | 191.63 | 4 062.9 | 215.23 | 5 125.6 |
| 80 | 3" | 249.57 | 3 146.1 | 360.00 | 6 545.3 | 419.74 | 8 899.4 | 471.45 | 11 227 |
| 100 | 4" | 428.81 | 5 405.7 | 618.51 | 11 246 | 721.21 | 15 291 | 810.06 | 19 291 |
| 150 | 6" | 971.47 | 12 246 | 1 401.2 | 25 478 | 1 633.9 | 34 642 | 1 835.2 | 43 703 |
| 200 | 8" | 1 824.8 | 23 004 | 2 632.1 | 47 859 | 3 069.1 | 65 072 | 3 447.2 | 82 092 |
| 250 | 10" | 2 917.2 | 36 774 | 4 207.7 | 76 508 | 4 906.4 | 104 030 | 5 510.8 | 131 230 |
| 300 | 12" | 4 236.8 | 53 410 | 6 111.1 | 111 120 | 7 125.8 | 151 080 | 8 003.6 | 190 600 |

Measuring range saturated steam: 150 to 300 psig

| Overpressure [psig] | | 150 | | 200 | | 250 | | 300 | |
|---|---|---|---|---|---|---|---|---|---|
| Density [lbs/ft³] | | 0.3627 | | 0.4681 | | 0.5735 | | 0.6792 | |
| Temperature [°F] | | 366.08 | | 388.04 | | 406.22 | | 422.06 | |
| Flow [lbs/h] | | min. | max. | min. | max. | min. | max. | min. | max. |
| DN to EN 1092-1 | DN to ANSI B16.5 | | | | | | | | |
| 15 | ½" | 27.79 | 324.21 | 35.86 | 418.47 | 43.94 | 512.66 | 52.04 | 607.12 |
| 25 | 1" | 58.93 | 1 042.1 | 66.94 | 1 345.1 | 74.10 | 1 647.8 | 80.63 | 1 951.5 |
| 40 | 1½" | 147.72 | 4 107.2 | 167.83 | 4 702.8 | 185.76 | 5 237 | 202.15 | 5 728 |
| 50 | 2" | 255.75 | 7 111.9 | 290.56 | 8 141.9 | 321.60 | 9 066.8 | 350.00 | 9 917 |
| 80 | 3" | 560.19 | 15 578 | 636.44 | 17 834 | 704.43 | 19 860 | 766.60 | 21 722 |
| 100 | 4" | 962.54 | 26 766 | 1 093.5 | 30 643 | 1 210.4 | 34 124 | 1 317.2 | 37 324 |
| 150 | 6" | 2 180.6 | 60 639 | 2 477.4 | 69 421 | 2 742.1 | 77 307 | 2 984 | 84 556 |
| 200 | 8" | 4 096.1 | 113 900 | 4 653.6 | 130 400 | 5 150.7 | 145 210 | 5 605.2 | 158 830 |
| 250 | 10" | 6 548.1 | 182 090 | 7 439.3 | 208 460 | 8 234.1 | 232 140 | 8 960.6 | 253 910 |
| 300 | 12" | 9 510.2 | 264 460 | 10 805 | 302 760 | 11 959 | 337 150 | 13 014 | 368 770 |